

HIGH STRENGTH PRECISION GROUT

Description

ProSpec® High Strength Precision Grout is a specially formulated, ready to use, high strength, flowable precision grout.

Features

- Conforms to CRD-C621 Corps of Engineers Specification for Non-Shrink Grout and ASTM C-1107
- Combines high fluidity, excellent working time and early strength build insuring quick job start ups, thereby reducing costs
- Non-porous very high dense grout resistant to water and salt penetration and damage from freeze/thaw cycles
- High density
- High initial and ultimate flexural and compressive strengths
- Non-metallic
- Non-staining and non-corrosive
- Non-shrink, high fluidity and controlled expansion provide full load bearing coverage
- Interior/exterior
- Can be extended with proper aggregate by up to 50%
- Contains no chlorides or other salts detrimental to reinforcing steel
- Can be pumped into areas inaccessible by conventional grouting methods

Uses

- Precision grouting of machinery bases sole plates, rolling mills, generators, anchor bolts, transfer lines, paper mills and structural grouting of precast columns, crane rails, bridge seats, dowels, etc.
- Grouting applications where shrinkage must be eliminated and corrosion and staining cannot be accepted
- Applications where ample working time and high flow are required, while providing high compressive strengths in 24 hours



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Technical Data				
	Plastic	Flowable	Fluid	Requirements
Mixing Water	3.82 qts/50 lbs.	4.0 qts./50 lbs.	4.5 qts./50 lbs.	
Curing Method	ASTM C 1107	ASTM C 1107	ASTM C 1107	ASTM C 1107 specs (psi)
Compressive Strength ASTM C 109				
1 day	6,000 psi (41.4 MPa)	5,500 psi (38.0 MPa)	4,000 psi (27.6 MPa)	1,000 min.
3 days	7,200 psi (49.7 MPa)	7,000 psi (48.2 MPa)	6,100 psi (42.1 MPa)	2,500 min.
7 days	8,500 psi (58.6 MPa)	8,500 psi (58.6 MPa)	7,500 psi (51.8 MPa)	3,500 min.
28 days	10,500 psi (72.5 MPa)	10,000 psi (69.0 MPa)	9,000 psi (62.1 MPa)	5,000 min.
ASTM C 1090 Measuring Changes in Height of Cylindrical Specimens from Hydraulic – Cement Grout				
1 Day Expansion	+0.04%	+0.01%	+0.00%	+0.02 to 0.3%
3 Day Expansion	+0.04%	+0.02%	+0.00%	+0.02 to 0.3%
28 Day Expansion	+0.06%	+0.03%	+0.00%	+0.02 to 0.3%
ASTM C 827 Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures				
Average Change in Height at Final Set	0.55%	1.49%	1.23%	0 to 4.0%
ASTM C 191 Time of Setting of Hydraulic Cement by Vicat Needle				
Initial Set	5 hrs.	6 hrs.	6.5 hrs.	
Final Set	5.75 hrs.	7 hrs.	7.5 hrs.	
Flow of grout ASTM C 939	115	135	—	Plastic 100-125 Flowable 125-145 Fluid 10-30 sec.
At 5 min.	—	—	27 sec.	
At 30 min.	—	—	28 sec.	
At 60 min.	—	—	35 sec.	

Forming

Forms must be sealed to prevent water or grout escaping and provide for rapid continuous grout placement. When placing provide an angle in the forms high enough to assist in grouting. For pouring minimum openings of 3" (76 mm) for entry and 6"

(152 mm) for "head" are recommended. Venting must be provided to avoid entrapping air. Forms should be at least 1" (25 mm) higher than the bottom of the base plate.

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Preparation

All grout surfaces must be solid, completely free of oil, wax, grease, sealers, paint and other contaminants that may act as a bond breaker. Unsound concrete must be chipped away, leaving a rough strong surface insuring bond. Prior to grouting, areas should be saturated with water for 12-24 hours after which all excess water is removed. This produces

a saturated surface dry grouting area (SSD). Maintain ambient and surface temperatures between 40° F and 95° F. Set times and strength developments are dependent on temperature.

Hot temperatures will accelerate physical properties while cold will have a retarding effect.

Refer to

- ACI 305 [Standard on Hot Weather Concreting](#)
- ACI 306 [Standard on Cold Weather Concreting](#)

Mixing

Water Requirements:

Consistency	Amount per 50 lb. (22.7 kg) bag
Plastic	3.8 qts. (3.6 L) clean potable water
Flowable	4.0 qts. (3.8 L) clean potable water
Fluid	4.5 qts. (4.3 L) clean potable water

In applications where the grout thickness is to be greater than 3" (76 mm) up to 50% clean, washed and dried 3/8" (10 mm) pea gravel, based on the weight of the grout, may be added. (25 lbs. (11.3 kg) of pea gravel to 50 lbs. (22.7 kg) of ProSpec High Strength Precision Grout).

Small quantities can be mixed in a container by hand or by using a mechanical mixer such as a paddle attached to a 1/2" heavy duty drill. For large quantities and continuous pours a mortar mixer or grout pump is recommended. Always mix for a minimum of 5 minutes using the minimum water needed to produce the desired placement consistency.

Place 3/4 of the anticipated mixing water into the mixer, start the mixer and then add the grout. After the powder has been added put in the additional water necessary to achieve the desired consistency. Thoroughly mix for 5 minutes to a lump free consistency and place. Do not mix more than can be placed in 30 minutes or over water.

Application

Place ProSpec High Strength Precision Grout from one side allowing it to flow to the opposite and adjacent sides thereby avoiding air entrapment. Vent holes should be provided where needed.

Compaction can be achieved by rodding, chaining or light vibration. To avoid segregation and bleeding, do not over work or over water.

Clean Up

Clean equipment with water and detergent immediately after use

Best Performance

- Ideal ambient and material temperatures should be in the range of 40° to 100° F (4° to 38° C) for mixing and placing. Temperatures outside of this range refer to American

- Concrete Institute Standards 305 and 306 or call ProSpec Technical Service.
- Do Not re-temper after mixing
 - Do Not over water or add other cements or additives.

Refer to

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Finishing/Curing

Forms may be removed after the grout has hardened to an initial set and retains its shape. This time period will vary according to temperature. At this point final finishing and curing can start. The grout should slope downward from baseplates or similar structures at a 45° angle from the lower edge.

Prevent rapid water loss by covering the exposed grout surfaces with wet burlap during the first 48 hours or apply an acceptable water based cure and seal agent.

Yield

One 50 lb. (22.7 kg) bag yields approximately 0.42 ft³ (0.01 m³) at 4.5 quarts (4.3 L) of water

One 50 lb. (22.7 kg) bag extended with 25 lbs. (11.3 kg) of washed pea gravel (3/8" (10 mm)) yields approximately 0.58 ft³ (0.02 m³) at 4.5 quarts (4.3 L) of water

Packaging

50 lb. (22.7 kg) moisture resistant bag

Storage

Always keep in cool dry place unexposed to sunlight and tightly reseal container.

Shelf Life

One year when stored properly in original unopened container.

Caution

KEEP OUT OF REACH OF CHILDREN AND ANIMALS. WARNING!

Provide proper air circulation
Can be irritating to eyes and skin. Avoid contact with eyes or

prolonged skin contact. In case of eye contact, flush thoroughly with water, DO NOT RUB EYES and call physician immediately. Wash hands with soap and water. Do not take internally

Consult Material Safety Data Sheet for further information

First Aid

Inhalation: Remove to fresh air
Eye Contact: Irrigate eye with water or consult physician if irritation persists.

Skin Contact: Washed exposed skin area with soap and water; consult a physician if irritation persists

Ingestion: Immediately consult a physician

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